

**I CLAIM:**

1. An apparatus for treating waste material comprising:
  - (a) a thermal reactor including a hollow housing and a reaction chamber disposed within said hollow housing;
  - (b) feed means connected to said thermal reactor for controllably feeding the waste material to reactor chamber of said thermal reactor;
  - (c) conveyor means for conveying the waste material through said reactor chamber of said thermal reactor; and
  - (d) heating means for heating said reaction chamber, said heating means comprising a thermal oxidizer connected to said thermal reactor for initially heating said reaction chamber.
2. The apparatus as defined in claim 1 in which said conveyor means comprises a pair of conveyor mechanisms rotatably mounted within said reaction chamber in a side-by-side relationship.
3. The apparatus as defined in claim 1 in which said thermal oxidizer includes first and second subchambers divided by a baffle means for controlling the flow of gases between said first and second subchambers.
4. The apparatus as defined in claim 1 further including drying means operably associated with thermal reactor for drying the waste material.
5. The apparatus as defined in claim 1 in which said feed means comprises:
  - (a) a waste receiving hopper connected to said thermal reactor; and
  - (b) a feed screw connected to said waste-receiving hopper for controllably transporting the solid waste material toward said thermal reactor.
6. The apparatus defined in claim 1 in which said feed means comprises:
  - (a) a waste receiving hopper connected to said thermal reactor;
  - (b) a feed screw connected to said waste receiving hopper for transporting liquid waste material toward said pyrolytic converter; and

(c) atomizing means connected to said feed screw for at least partially atomizing the liquid waste material prior to transporting the liquid waste material toward said pyrolytic converter.

7. The apparatus as defined in claim 1 in which said thermal oxidizer comprises:

(a) a housing having first and second chambers; and

(b) baffle means disposed between said first and second chambers for controlling the flow of gases therebetween.

8. The apparatus as defined in claim 1 in which said reaction chamber of said thermal reactor comprises an elongated, hollow structure having first and second subchambers and in which said conveyor means comprises a first conveyor mechanism mounted within said first subchamber and a second conveyor mechanism mounted within said second subchamber, each of said first and second conveyor mechanisms including a first helical screw section and a second paddle section.

9. The apparatus as defined in claim 1 further including a steam generating means connected to said thermal oxidizer for generating steam using heated gases received from said thermal oxidizer.

10. The apparatus as defined in claim 7 further including a steam driven turbine connected to said steam generating means for receiving steam therefrom to drive said turbine.

11. An apparatus for treating waste material comprising:

(a) a thermal reactor including a hollow housing and a reaction chamber disposed within said hollow housing;

(b) feed means connected to said thermal reactor for controllably feeding the waste material to reactor chamber of said thermal reactor;

(c) conveyor means for conveying the waste material through said reactor chamber of said thermal reactor, said conveyor means comprising a pair

of conveyor mechanisms rotatably mounted within said reaction chamber in a side-by-side relationship;

(d) heating means for heating said reaction chamber, said heating means comprising a thermal oxidizer connected to said thermal reactor for initially heating said reaction chamber, said thermal oxidizer comprising first and second subchambers divided by a baffle means for controlling the flow of gases between said first and second subchambers; and

(e) drying means operably associated with thermal reactor for drying the waste material.

12. The apparatus as defined in claim 1 in which said feed means comprises:

(a) a waste receiving hopper connected to said thermal reactor; and

(b) a feed screw connected to said waste-receiving hopper for controllably transporting the waste material toward said thermal reactor.

13. The apparatus as defined in claim 11 in which each of said conveyor mechanisms comprises a first screw conveyor section interconnected with said first section and comprising a plurality of paddle flights.

14. The apparatus as defined in claim 11 further including pressure sensing means operably associated with said baffle means for sensing pressure differential between said first and second subchambers.

15. The apparatus as defined in claim 11 further including a steam generating means connected to said thermal oxidizer for generating steam using heated gases received from said thermal oxidizer.

16. The apparatus as defined in claim 15 further including a steam driven turbine connected to said steam generating means for receiving steam therefrom to drive said turbine.

17. The apparatus as defined in claim 16 in which said steam generating means comprises:

(a) a water boiler;

(b) a source of water connected to said water boiler for supplying water thereto; and

(c) a condenser connected to said water boiler for condensing steam generated thereby.